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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/630,345

07/29/2003

Joseph A. Zupanick

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EXAMINER

KRECK, JOHN J

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/630,345	<b>Applicant(s)</b> ZUPANICK, JOSEPH A.	
	<b>Examiner</b> John Kreck	<b>Art Unit</b> 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26,27,29,30,32-35,37-44,46,48-55,57-66,68-73,75-81 and 83-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's response to the requirement for information has been accepted as substantially complete. Applicant's request to withdraw the requests labeled i and ii is granted.
2. Claims 26, 27, 29, 30, 32-35, 37-44, 46, 48--55, 57-66, 68-73, 75-81, 83-92 are pending.
3. Claim 85 purports to depend from claim 82 (canceled).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 26, 27, 29, 30, 33, 35, 37, 38, 39, 40, 41, 48, 49, 50, 53, 54, 55, 57, 59, 60, 61, 62, 63, 69, 70, 71, 75, 77, 78, 79, 81, 83, 85, 90, 91, and 92 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Gardes U.S. Patent number 6,923,275. It is noted that the instant application claims priority to myriad applications with earlier effective dates. A review of those parent applications in EAST has not revealed any earlier filed application which includes "underbalanced" drilling in a coal seam.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 42, 43, 44, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent number 5,435,400) in view of Stanley (U.S. Patent number 5,411,104) and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275). N.B.: Gardes is available as prior art under 35 USC 102(e). It is noted that the instant application claims priority to myriad applications with earlier effective dates. A review of those parent applications in EAST has not revealed any earlier filed application which includes "underbalanced" drilling in a coal seam.

Smith teaches a method including drilling and pumping. Smith fails to explicitly teach the coal seam, but discloses that the method is useful to obtain gas.

Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam as called for in claim 40, in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled

with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3. See also Gardes at col. 7, lines 55-65.

Smith teaches the pumping through a second bore (second bore is 2, first bore is 34) as called for in claim 42.

Smith teaches that the second bore comprises a vertical bore as called for in claim 43.

Smith teaches the first bore is articulated as called for in claim 44.

Smith teaches the pumping through a second bore (second bore is 2, first bore is 34) as called for in claim 64.

2. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller, et al. (U.S. Patent number 5,355,967) in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275).

Mueller teaches the drilling and pumping, but fails to teach the coal seam. Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam, in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and

3. See also Gardes at col. 7, lines 55-65. Mueller teaches a pressure of 100psi (col. 4, line 10) as called for in claim 46.

3. Claims 42, 43, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (U.S. Patent number 4,134,463) in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275).

Allen teaches drilling and pumping, but fails to teach the coal seam. Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam a , in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3. See also Gardes at col. 7, lines 55-65..

Allen teaches the pumping through a second bore as called for in claim 42.

Allen teaches that the second bore comprises a vertical bore (e.g. near 24) as called for in claim 43.

Allen teaches the junction as called for in claim 51.

Allen teaches the cavity as called for in claim 52. Note that the bore at the bottom of well 18 is a "cavity", even though it is not enlarged.

4. Claims 32, 34, 58, 65, 66, 68, 72, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275).

Smith teaches pumping and reducing pressure by reducing weight of drilling fluid (the disclosed gas lift reduces the weight of the column dense drilling fluid, by admixing the fluid with much lighter gas). Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3. See also Gardes at col. 7, lines 55-65..

Regarding claims 32 and 34: the exact pressure is deemed to be a design variable within the scope of normal drilling engineering procedures. It would have been

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obvious to one of ordinary skill in the art at the time of the invention to have practiced the Smith process with a pressure of nearly zero or 150-200 psi.

Smith teaches pumping through a second bore (2) as called for in claim 58.

Smith shows the second bore (2) is substantially vertical as called for in claim 65.

Smith shows the first bore (34) is articulated as called for in claim 66.

Regarding claim 68: Official Notice is taken of the fact that coal seams are known which have pressures in that range. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the Smith process in a coal seam with a pressure below 150psi as called for in claim 68.

Smith teaches the junction (e.g. 26) as called for in claim 72.

5. Claims 76, 80, 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley in view of Campbell (U.S. Patent number 3,534,822) and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275).

Stanley teaches horizontal drilling underbalanced in a coal seam using air alone.



Campbell teaches underbalanced drilling including using a drilling fluid comprising a liquid foam to reduce downhole pressure by reducing weight of the drilling fluid, and that the foam is advantageous over air alone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Stanley process to have included drilling using liquid and reducing downhole pressure. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3. See also Gardes at col. 7, lines 55-65..

Campbell teaches the foam as called for in claims 76, 80, and 84.

6. Claims 86-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley in view of Murray (U.S. Patent number 5,785,133); Campbell (U.S. Patent number 3,534,822) and the Underbalanced Drilling Manual (cited by applicant 1/11/05) and Gardes (U.S. Patent number 6,923,275).

Stanley teaches accessing a coal seam including drilling through a well bore having a radiused portion a horizontal bore, but fails to teach the drilling the plurality of laterals and using foam (Stanley teaches air alone). Stanley teaches that underbalanced drilling is advantageous in coal.

Murray teaches the drilling of a plurality of laterals. One of ordinary skill in the art would have recognized that the plurality of laterals improves hydrocarbon recovery.

Campbell teaches underbalanced drilling including using a drilling fluid comprising foam, and that the foam is advantageous over air alone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Stanley process to have included drilling the plurality of laterals and using foam as called for in claim 86. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3. See also Gardes at col. 7, lines 55-65..

Stanley teaches the not-overbalanced conditions as called for in claim 87.

Stanley teaches producing gas and water as called for in claim 88.

### ***Response to Arguments***

7. Applicant's arguments filed 2/26/07 have been fully considered but are largely moot in view of the new ground of rejection.

a. Applicant argues that the body of prior art, taken as a whole, teaches away from the proposed combinations. Insofar as the claims are rejected as obvious, the newly cited Gardes reference provides substantial evidence of the obviousness of underbalanced drilling in coal.

b. It is noted that applicant has made no attempt to point out any deficiencies in the prior art aside from applicant's contention that Stanley teaches away from underbalanced drilling using liquid.

c. Applicant has made no attempt to traverse the taking of Official Notice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kreck whose telephone number is 571-272-7042. The examiner can normally be reached on Mon-Fri 6am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Kreck/  
Primary Examiner, Art Unit 3672

6 May 2008

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